**Two-Dimensional and**

**Multi-DimensionalArrays**

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| **AddAlternateElementsof2-DimensionalArray** | |
| **ProblemStatement:**  You are given a two-dimensional 3\*3 array starting from A [0][0]. You should add the alternate elements of the array andprint its sum. It should print twodifferent numbers the firstbeingsum ofA 00, A02,A1 1,A 20,A 22 and A01,A10,A1 2,A 21.  InputFormat  Firstandonlylinecontainsthevalueofarrayseparatedbysinglespace.    OutputFormat  FirstlineshouldprintsumofA00,A02,A11,A20,A22  SecondlineshouldprintsumofA01,A10,A12,A21  SampleInput  123456789  Sample Output 25  20 | |

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### Program:

**#include<stdio.h>**

**int main()**

**{ int arr[3][3]; for(int i=0;i<3;i++)**

**{ for(int j=0;j<3;j++)**

**{**

**scanf("%d",&arr[i][j]);**

**}**

**} int odd=0, even=0; for(int i=0;i<3;i++)**

**{**

**for(int j=0;j<3;j++)**

**{**

**if((i+j)%2!=0)**

**odd+=arr[i][j];**

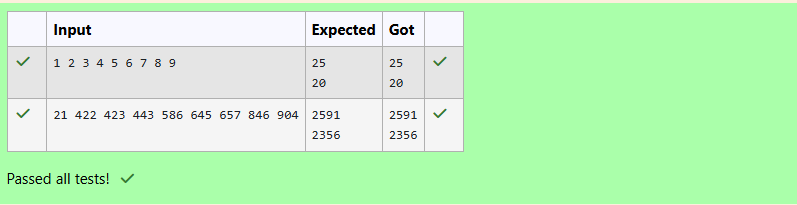
**else**

**even+=arr[i][j];**

**}**

**} printf("%d\n%d", even, odd);**

**}**

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|  | **TheWealthyLandlord** |
| **ProblemStatement:**  Shyam Lal, a wealthy landlord from the state of Rajasthan, being an old fellow and tired of doing hard work, decided to sellall his farmland and to live rest ofhis life with thatmoney. No other farmer is rich enough to buy all his land so he decided to partition the land into rectangular plots of different sizes with different cost per unit area. So, he sold these plots to the farmers but made a mistake. Being illiterate, he made partitions that could be overlapping.Whenthe farmerscametoknowaboutit,theyranto himfor compensation of extra money they paid to him. So, he decided to return all the money to the farmers of that land which was overlapping with other farmer's land to settle down the conflict. Allthe portionof conflicted landwill be takenback by thelandlord.  Todecidethetotalcompensation,hehastocalculatethetotalamountofmoneytoreturn backtofarmerswiththesamecosttheyhadpurchasedfromhim.Suppose,ShyamLalhas atotallandareaof1000x1000equalsquareblockswhereeachblockisequivalenttoa unit square area which can be represented on the co-ordinate axis. Now find the total amountofmoney,hehastoreturntothefarmers.HelpShyamLaltoaccomplishthistask.  InputFormat:ThefirstlineoftheinputcontainsanintegerN,denotingthetotalandpieces hehaddistributed.NextNlinecontainsthe5spaceseparatedintegers(X1,Y1),(X2,Y2) to represent a rectangular piece of land, and cost per unit area C.  (X1, Y1) and (X2, Y2) are the locations of first and last square block on the diagonal of the rectangular region.  OutputFormat:  Printthetotalamounthehastoreturntofarmerstosolvethe conflict.  Constraints:  1≤N≤100  1≤X1≤X2≤1000  1≤Y1≤Y2≤1000  1≤C≤1000  SampleInput 3  14461  43662  22543  Sample Output 35 | |

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| Explanation    Forgivensampleinput(seegivengraphforreference),compensationmoneyfor different  farmersisasfollows:  Farmer with land area A: C1 = 5 \* 1 = 5 FarmerwithlandareaB:C2=6\*2=12 FarmerwithlandareaC:C3=6\*3=18  TotalCompensationMoney =C1 + C2+ C3 =5+12+ 18 =35 |

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| **Program:**  **#include<stdio.h>**  **struct data**  **{**  **int gen; int tal;**  **};**  **int main(){**  **int n;**  **scanf("%d",&n);**  **struct data a[n];**  **for(int i=0;i<n;i++)**  **scanf("%d %d",&a[i].gen,&a[i].tal);**  **for(int i=0;i<n-1;i++){**  **for(int j=0;j<n-i-1;++j){**  **if(a[j].tal<a[j+1].tal){**  **struct data temp=a[j];**  **a[j]=a[j+1];**  **a[j+1]=temp;**  **}}}**  **for(int i=0;i<n;i++){**  **if(a[i].gen-0)**  **printf("%d ",a[i].tal);**  **}for(int i=0;i<n; 1)**  **{**  **if(a[i].gen==1) printf("%d",a[i].tal); }**  **}** |

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|  | **PriorityInterview** |
| **ProblemStatement:**  Microsoft has come to hire interns from your college. N students got shortlisted out of whichfewweremalesandafewfemales.Allthestudentshavebeenassignedtalent levels. Smaller the talent level, lesser is your chance to be selected. Microsoft wants to create the result list where it wants the candidates sorted according to their talent levels, but thereisacatch.ThistimeMicrosoftwantsto hirefemalecandidatesfirst and thenmale candidates. The task is to create a list where first all-female candidates are sorted in a descendingorderandthenmalecandidatesaresortedinadescendingorder.  InputFormat  ThefirstlinecontainsanintegerNdenotingthenumberofstudents.Next,Nlinescontain two space-separated integers, ai and bi. The first integer, ai will be either 1(for a male candidate) or 0(for female candidate). The second integer, bi will be the candidate's talentlevel.  Constraints:1<=N<=105,0<=ai<=1,1<=bi<=109  OutputFormat  Output space-separated integers, which first contains the talent levels of all female candidates sorted in descending order and then the talent levels of male candidates in descending order.  SampleInput 5  03  16  02  07  115  Sample Output 7 3 2 15 6 | |

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**Program:**

**#include<stdio.h>**

**int main()**

**{**

**int i,j,n,x1,x2, y1,y2, t=0;**

**long long total=0;**

**int arr[1001] [1001]={0};**

**scanf("%d",&n);**

**while(n--)**

**{**

**scanf("%d %d %d %d %d", &x1,&y1,&x2,&y2,&t);**

**for(i=x1;i<=x2;i++)**

**{**

**for(j=1;j<=y2;j++)**

**{**

**if(arr[i][j]==0)**

**arr[i][j]+=t;**

**else if(arr[i][j]>0)**

**arr[i][j]=(-1)\*(arr[i][j]+t);**

**else if(arr[i][j]<0)**

**arr[i][j]-=t;**

**}**

**}**

**}**

**for(i=1;i<1001;i++)**

**{ for(j=1;j<1001;j++)**

**{**

**if(arr[i][j]<0)**

**total+=arr[i][j];**

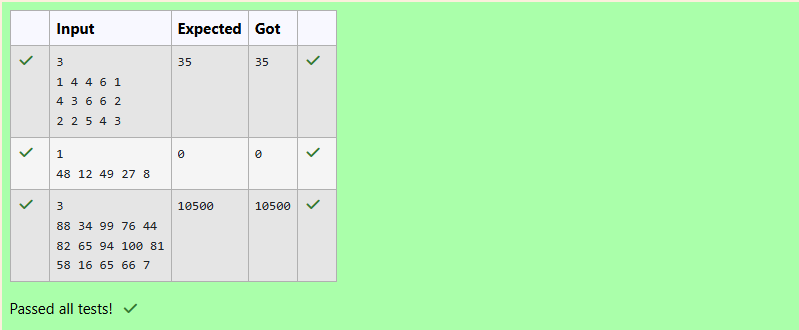
**}**

**}**

**printf("%lld\n", (-1)\*total);**

**return 0;**

**}**

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